

R E M A R K S

Claims 1, 5-11 and 13-16 are now in this application, and are presented for the Examiner's consideration.

Prior Art Rejections

Claims 1, 5, 6, 9-11 and 13-15 were rejected under 35 U.S.C. §103(a) as being obvious from U.S. Patent No. 5,577,890 to Nielsen et al in view of U.S. Patent No. 5,362,206 to Westerman et al.

Claim 1 has been amended to more clearly define what is meant by the "chronological progression of the phase shift".

According to the disclosure at page 7, line 16, and page 8, lines 3 to 6 and 23 to 26, voltage and current are measured at different points in time to provide a plurality of recorded measured values corresponding to different points in time. In the determination step, the extent of the phase shift is measured for each corresponding voltage and current value to provide a succession of phase shift values which correspond to successive points in time. From this succession of phase shift values, the chronological progression of the phase shift is determined (see also the disclosure at page 8, lines 8 and 9).

It was stated that Nielsen et al does not teach the step of monitoring the phase shift over time. Applicant further asserts that Westerman et al also does not teach a corresponding step of monitoring the phase shift over time.

Specifically, Westerman et al does not disclose providing a plurality of recorded measured values corresponding to different points in time, to calculate a phase shift corresponding to these different points in time to obtain a resulting progression of phase shift values, corresponding to a chronological progression of the phase shift.

It was stated at page 3 of the Office Action that "integration is used as a means for reducing the data over a certain period of time into a more manageable data point" (according to Westerman et al). However, this is exactly not the object of the present invention. The present invention does not aim to reduce the data over a certain time period, but to examine different points of time within this time period. By an integration, this information is lost completely.

It was further stated that, according to Westerman et al, "accumulation of multiple data points over a period of time provides a chronological progression." However, this is not the case, since the chronological progression is represented by the succession of phase values which follow in time after each other. However, when multiple data points are integrated (or accumulated), the resulting value does not include any time information, but is simply the sum of the values of the data points.

Thus, claim 1 has been amended to further explain and clarify what is meant by the important feature of determining the

chronological progression of the phase shift from the succession of phase shift values.

Specifically, claim 1 now recites "at least one measurement step which measures an alternating voltage applied to a pump motor of the synchronous pump and an alternating current of the motor at different points in time to provide a plurality of recorded measured values corresponding to different points in time." More importantly, claim 1 has been amended to recite, as part of the determination step:

the step of determining an extent of a phase shift between the alternating voltage and the alternating current from the recorded measured values to provide a succession of phase shift values corresponding to successive points in time, and

the step of determining the chronological progression of the phase shift from the succession of phase shift values.

Westerman et al merely provides, as discussed above, a single value resulting from an integration of multiple data points, which does not include any time information. Thus, Westerman et al does not provide any chronological progression of the phase shift, as claimed.

Thus, for example, as recited in claim 6, the slope of the chronological progression of the phase shift, that is, this results from the chronological progression over successive points in time. This cannot occur in Westerman et al where a single value integration is provided.

Device claims 11-15 depend from method claim 1, and therefore includes all of the limitations of claim 1. Therefore, for the same reasons given above as to claim 1, it is submitted that claims 11-15 are in condition for allowance.

In addition to the above, new claim 16 has been added.

In new claim 16, the successive phase shift values are stored in a number of memory cells. This means that each memory cell contains one phase shift value. The succession of memory cells therefore represents the chronological progression when the content of the memory cells is computed accordingly.

Westerman et al does not disclose or even remotely suggest the feature of storing phase shift values corresponding to different points in time in different memory cells.

Accordingly, it is respectfully submitted that the rejection of claims 1, 5, 6, 9-11 and 13-15 under 35 U.S.C. §103(a) has been overcome.

Claims 7 and 8 were rejected under 35 U.S.C. §103(a) as being obvious from Nielsen et al and Westerman et al as applied above, and further in view of by U.S. Patent No. 4,896,101 to Cobb.

The remarks made above in regard to Nielsen et al and Westerman et al are incorporated herein, and therefore not repeated.

Cobb was merely cited for disclosing the use of a discrete Fourier transform. However, Cobb fails to cure the aforementioned deficiencies of Nielsen et al and Westerman et al as applied against claim 1, as discussed above in detail. Thus, in Cobb, there is no determination of the chronological progression of the phase shift from the succession of phase shaft values, as claimed in claim 1.

Accordingly, since claims 7 and 8 depend from claim 1, it is respectfully submitted that the rejection of claims 7 and 8 under 35 U.S.C. §103(a) has been overcome.

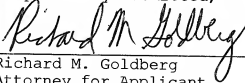
If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

In the event that this Paper is late filed, and the necessary petition for extension of time is not filed concurrently herewith, please consider this as a Petition for the requisite extension of time, and to the extent not tendered by check attached hereto, authorization to charge the extension fee, or any other fee required in connection with this Paper, to Account No. 07-1524.

The Commissioner is authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 07-1524.

In view of the foregoing amendments and remarks, it is respectfully submitted that Claims 1, 5-11 and 13-16 are allowable, and early and favorable consideration thereof is solicited.

Respectfully submitted,


Richard M. Goldberg
Attorney for Applicant
Registration No. 28,215

25 East Salem Street
Suite 419
Hackensack, New Jersey 07601
TEL (201) 343-7775
FAX (201) 488-3884
e-mail: goldbergpat@earthlink.net